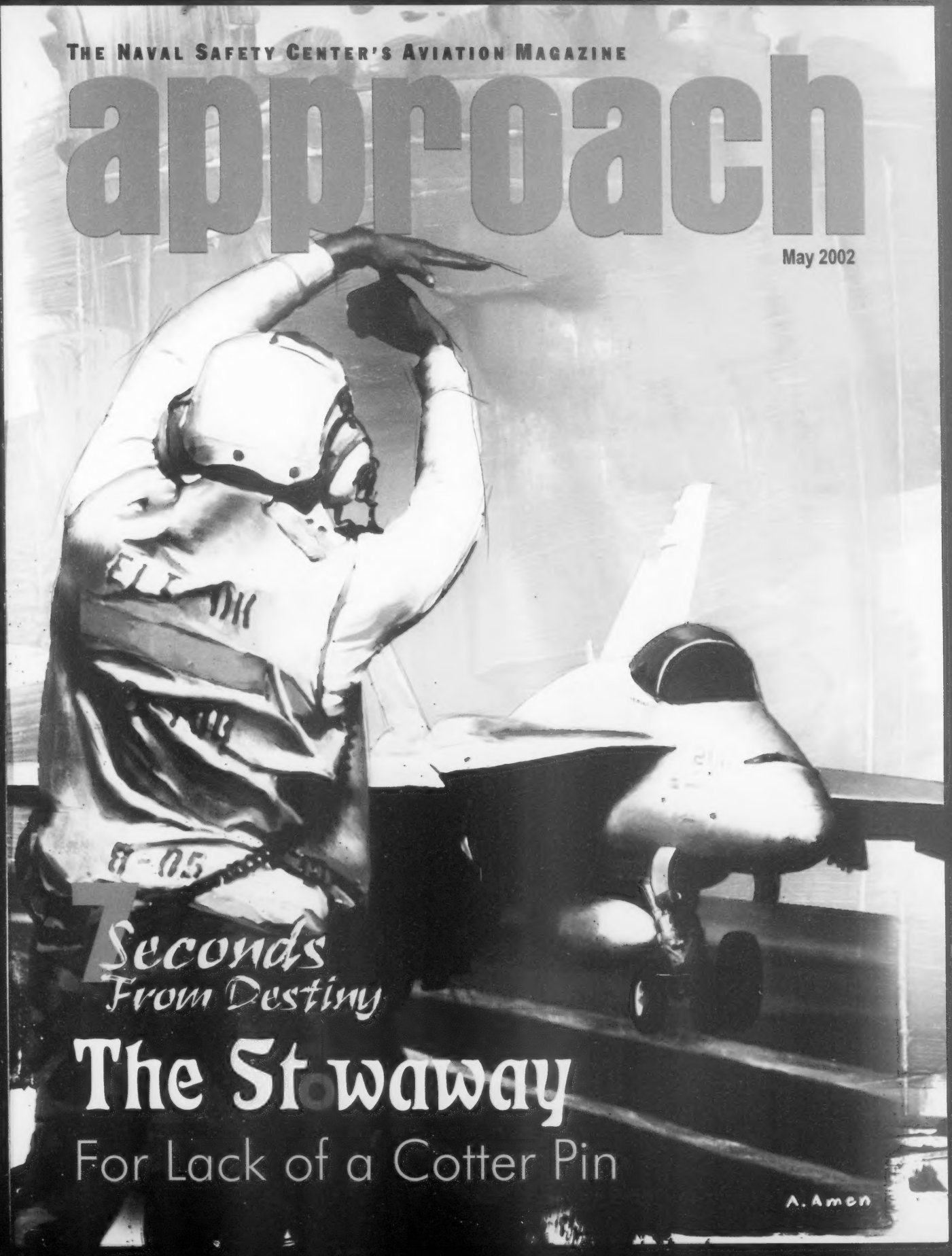
THE NAVAL SAFETY CENTER'S AVIATION MAGAZINE

approach

May 2002



7 Seconds From Destiny

The Stowaway

For Lack of a Cotter Pin

approach

The Naval Safety Center's Aviation Magazine

May 2002 Volume 47 No. 5
On the Cover A Hornet recovers on a carrier. Illustration by Allan Amen.
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Mission Statement

Mishaps waste our time and resources. They take our Sailors, Marines and civilian employees away from their units and workplaces and put them in hospitals, wheelchairs and coffins. Mishaps ruin equipment and weapons. They diminish our readiness.

This magazine's goal is to help make sure that personnel can devote their time and energy to the mission, and that any losses are due to enemy action, not to our own errors, shortcuts or failure to manage risk.

We believe there is only one way to do any task: the way that follows the rules and takes precautions against hazards. Combat is hazardous enough; the time to learn to do a job right is before combat starts.

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Thanks for helping with this issue...

LCdr. Mark Bruington, NSATS
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Lt. Jenny Tinjum, HC-11

Photo by PH3 Carrie-Anne Goldberg
Retouched by Allan Amen

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Correction. The table of contents in the January 2002 issue incorrectly refered to a S-3 "Hummer crew". The correct term is Hoover.

7 Seconds From Destiny

By Ltjg. Marc A. Aragon

Anyone who has spent a summer in the Arabian Gulf knows misery. The heat is oppressive, and you realize it the moment you step through the watertight door onto the weather deck of any ship in the gulf. The temperature and moisture of the air are extrememly high. Your chest tightens up, and you instinctively gasp for air in which the oxygen largely has been displaced by water vapor. Almost immediately, your clothes are soaked with sweat.

Such extreme environmental factors significantly affect the moods and performance of squadron personnel, maintainers and flight crew, alike. I'm certain heat and humidity contributed to one of the scariest moments in my aviation experience.

In May, I had been tasked as an H2P on a shore-based detachment whose mission was to FCF a particularly stubborn H-46. It was three weeks of FCF day after bloody-long day. Although it may seem like it, I'm not complaining because it was three weeks spent in Bahrain, complete with per diem and a nice hotel bed. The det gave me a lot of good experience, but none could have prepared me for the FCF nightmare coming my way.

Fast-forward to July. It was the fourth month of our six-month deployment to the Gulf. We were supporting a West Coast ship that supplied the carrier battle group with fuel, bombs and beans. One of our aircraft had a problem that required the removal and replacement of a rotor blade. Of course, an FCF is required whenever there's a change of any dynamic component.

For some reason, we were having a difficult time with this aircraft. Run after run, the FCF computer would come back with recommended pitchlink changes, along with the disclaimer "sub-optimal solution." A sub-optimal solution means the best solution the computer can come up with is one it doesn't expect will reduce the vibration levels to within its goal limits. Finally, after the eleventh run, and four days of flight testing, the functional check pilot and the MO were exasperated and decided to "zero out" the blade adjustments. The maintenance people sat down with all the printouts from the previous runs. They added all the adjustments that had been made to the pitchlinks and came up with pitchlink adjustments requiring as much as minus-eight clicks on one blade and plus-six clicks on another.

Armed with the data, the maintainers headed onto the 110-degree flight deck for the twelfth time to adjust the six pitchlinks to their zero settings. When the adjustments were complete, the HAC and I, along with our crewmen, faced the same stifling heat to try again to get the vibe levels within limits.

We flew through a checklist that, by now, had been deeply ingrained in our heads. The engine start and rotor engagement were normal, albeit with slightly higher-than-normal vibrations. The

Photo by Matthew J. Thomas
Retouched by Allan Arnen

FCF checklist procedure is to face the helicopter into the wind before initiating the vibrex computer. Our aircraft was parked on the port-to-starboard line-up line, but winds were down the starboard-to-port line-up line at 15 knots. We had two choices: One, ask the ship to give us winds down the starboard line-up, a task requiring at least fifteen minutes to complete. Two, pick up into a hover and do a pedal turn to park the aircraft on the port line-up, a three-minute evolution at most. The choice seemed obvious.

The HAC called tower with souls and state and said we were ready for break-down and launch to reposition nose to port. With the deck-status light flashing green, I signaled the LSE to remove chocks and chains. The LSE showed five chains and two chocks. I acknowledged and signaled we were ready to launch.

The HAC was at the controls, and, as we lifted off, I felt vibrations the likes of which I never hope to feel again. If I hadn't been strapped in, I would have been thrown out of my seat. As it was, I was thrown against the straps with some serious force. The violent motion of the helicopter blurred my vision, and I couldn't see any of the gauges or anything else. Nor could I reach for the cyclic and the ICS switch. Luckily, the HAC had the presence of mind to put us right back down on the deck. After the HAC's landing, the vibes immediately went back to their slightly high but comfortable level.

After talking with the crew chief, we figured out what had happened. Either the calculations were 180 out, or the people who actually did the pitchlink changes did them backward. The pitchlinks that should have been dialed down eight clicks, were dialed up eight clicks, with nearly disastrous consequences.

Ltjg. Aragon flies with HC-11.

When the Unthinkable Happens:

Being Prepared for a Real-World Search and Rescue

By LCdr. Jim Laingen

We were several hundred miles off the coast of Sri Lanka and enjoying the transit home from our Western Pacific deployment. Then, after 99 miserable days in Arabian Gulf, our air wing suffered a sudden and tragic loss. An F-14D and its crew disappeared after a routine, night-air-intercept control (AIC) event, and an exhaustive search and rescue effort began.

For the next 20 hours, our air wing conducted a frantic search for our lost shipmates. The search extended more than 70 miles away from the carrier. Although our efforts were in vain, they highlighted many important lessons. My perspective is that of an E-2C airborne mission commander, but the lessons can be transferred to any platform.

You never know when disaster will strike, so you need to be ready. But being ready is easy to say—actually "being ready" is more difficult. Primarily, it takes a solid preflight plan, a well-thought-out scenario, and a thorough brief. You probably won't be able to cover every scenario and shouldn't try. Addressing general "what ifs" and how you would handle them will go a long way to make that quick, flexible reaction that could save the day. Study not only your platform's capabilities but those of other units in the battle group: ships, aircraft, radios, and datalinks. You won't know what you'll need until you need it. Have the necessary materials at all times. In a prolonged SAR effort, you may require extra paper to log the facts, frequencies for other units in the battle group, preprinted search plans, or the proper TacAid in your "blue brains".

Next, stay alert. The E-2C controlled the AIC before the plane was lost. A "knock it off" was called, and the Hawkeye crew cleared the fighters to switch frequencies on their way home. Soon after, the F-14's wingman called and asked if our Hummer crew had talked with the fighter—they had not, and the search began for the missing aircraft. It happened suddenly; no one had seen the plane go down. Using last known information from another fighter and radar tapes from nearby ships, a rough location was determined for the fighter's last location.

There are three other keys to being ready: keep track of your wingman and aircraft under your control, know the check-in and check-out procedures, and know the area weather.

Start a log. This can be invaluable for helping with the passdown to the next guy in the search, and it will help you recall important details. The mishap board will reconstruct the event. In multi-crew aircraft like the Hawkeye, don't be limited to one log-keeper. Your logs become privileged material for the mishap board. We used logs from every crewman on our six continuous sorties to build a detailed timeline of the search effort.

Use your systems. When we launched, our aircraft was the second E-2C on station. We had a few details of the initial search plan but nothing concrete. With a proper passdown from the other aircraft, we built an accurate picture of the search space. It gave instant situational awareness to the crew on the game plan. It also was sent across link 11 and 16 to the other players in the search. Link 4 can be used to guide the search aircraft onto contacts or to search location. Each aircraft brings special capabilities: night-vision goggles, infrared scopes, or the S-3 radar's periscope mode. The tools are there, make sure you know how to use them.

Keep it simple. Before we knew it, we had eight aircraft and two ships under our control for the search. Keeping the plan simple was paramount. Initially, no one could get a word in on the frequency, and our one controller was losing the bubble on where everyone was going. We split up the control and simplified the plan. We quickly regained full control of the situation and gave each aircraft a quadrant and altitude to work. The small boys were employed as lily pads to refuel our helos, so they could continue the search.

Who's in charge? Good command, control and communications is necessary for a long-range SAR. All players must be aware of the chain of command—it should be established during the SAR contingency brief.

These command lines might blur, depending on the range of the SAR, the assets involved, and the scenario. In our case, after the quick, initial search by the wingmen, there was no on-scene commander because no one was in the water, but the AMC quickly was designated (the E-2C), and our contact—the rescue mission coordinator (RMC)—was identified on the carrier. It was necessary to reinforce this command relationship several times. Communications are critical to any SAR, and we had our share of communication problems. We just had fixed the split-control issue when it became obvious there were too many call signs and communications paths (UHF, JTIDS voice, SATCOM, even chat rooms) in use. Reducing the communications overload and following the chain of command improved the operation.

Use all your resources. An open-ocean search is a difficult task, but you're not always alone out there. Using maritime bridge-to-bridge, channel 16, allowed us to contact a number of ships in the area to aid in the search. Most were willing to post extra lookouts and even change course to help. An Australian P-3 volunteered to help. Be ready, and act quickly to capitalize on what's available.

These are a few lessons we learned or rediscovered. All scenarios are different, but being prepared and sticking to the basics can help. No one way is the right way, and everyone brings different tools, capabilities and experience. Conduct the search as safely as possible; don't complicate the situation.

LCdr. Laingen flew with VAW-116 and is currently assigned to the Airborne Early Warning Wing Pacific at Naval Base Ventura County.

First, It Gets Better

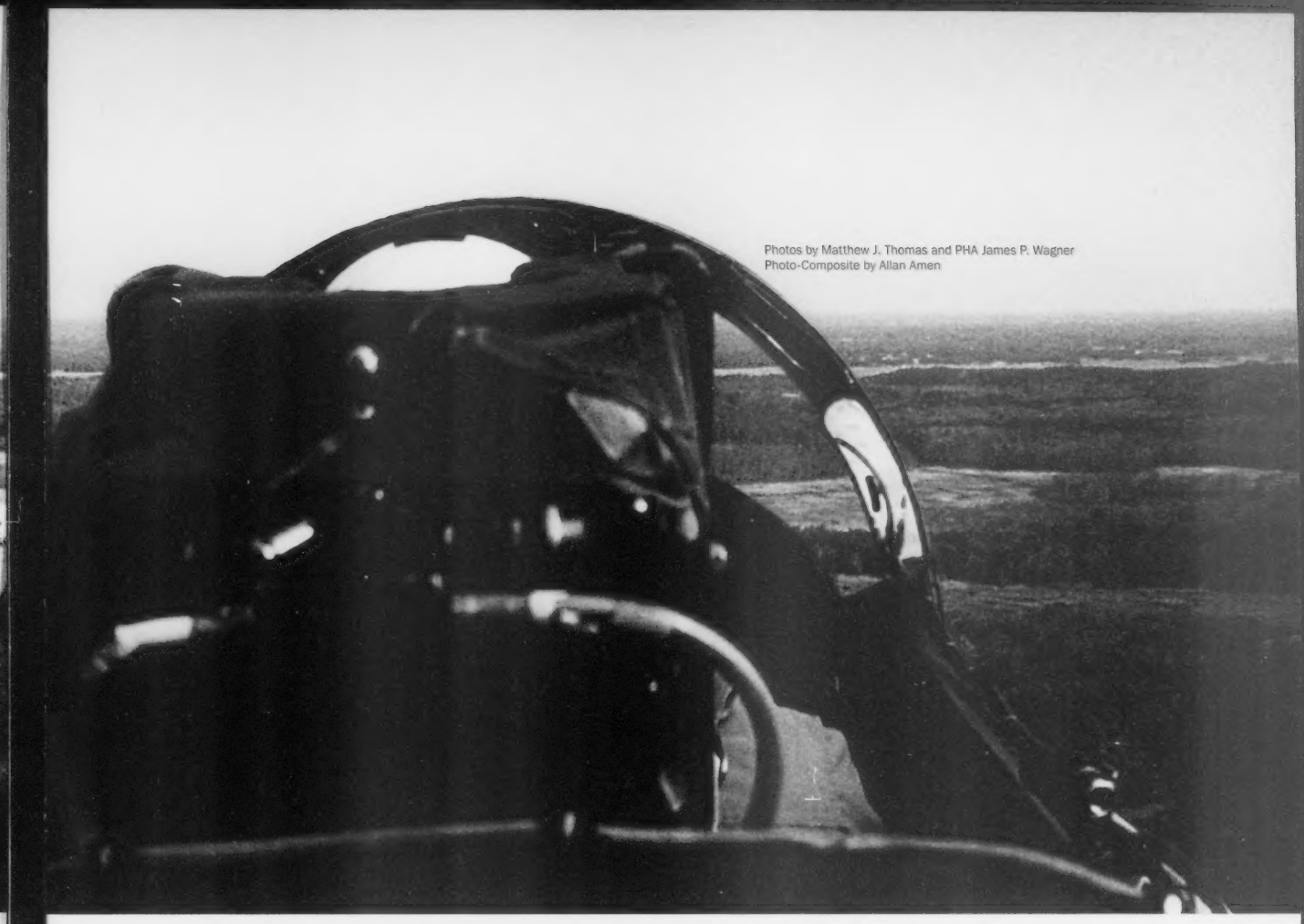
By LCdr. Patrick Hannifin

It's a beautiful Monday morning at NAS Patuxent River, Md., and I am doing what we all love best on such days: sitting in a safety stand-down at the base theater. The day will get better, and then much worse.

The "better" part is that the stand-down ends, and I'm feeling safe. I brief in the T-45 project office with the Ops O for my afternoon flight. Today's day trainer is to maintain test currency, no testing. The Ops O is an F-14 RIO who also flies with our Hornets—this will be his first T-45 flight. We'll do our standard VFR takeoff to the local working area for a 1.5 or so, do some aircraft specifics, and do standard crew management stuff for a two-seater.

We take off and retract the flaps and gear at 170 knots. At 195 knots, we do a gear-handle check. Six pounds? I couldn't tell ya—left my hand calibrator in the other nav bag. An area fam for 15 minutes from 10,000 to 25,000 feet. Rear seat at the controls, getting a feel for the aircraft. An easy, nose-low slice turn from the low 20s and 300 knots, gradually increasing the G. I think squadron SOP requires a G-warm if we anticipate anything greater than 5Gs (I was wrong—SOP says 3Gs). I'd call or effect an ease prior to 5…4.1…4.2…4.

And then it gets much worse. At 4.3Gs, 14,000 feet, 430 knots, and 50 degrees nose low, a loud thump is accompanied by lateral movement and a door light above the gear indicators. I take the controls and hear, "You got it," from the pilot in the rear cockpit. I recover the aircraft to a slight climb in wings-level flight. The master-alert-caution light, tone, and hyd 1 caution light illuminated as hyd 1 dropped from 1,500 to 1,100



Photos by Matthew J. Thomas and PHA James P. Wagner
Photo-Composite by Allan Amen

psi, and eventually to zero. We need almost full-left rudder to balance the yaw. There are no significant G-spikes during the event or recovery. The lowest altitude we get to is 7,700 feet. Over the next several minutes, I observe the hyd 1 pressure fluctuating from zero to nearly 1,300 psi and back down again, enough to kick the master-alert light back on a few times. We are heading generally north and start a left turn to head back toward the field, 25 miles away.

The pilot in the rear cockpit broke out the NATOPS PCL while I monitored instruments and flew the aircraft. I had him read the hyd 1 procedures a couple of times without taking action on them. We announced our problem over the radio, requested an aircraft for visual inspection, and asked for an LSO on-station. SD324, a two-seat, photo-chase Hornet, was diverted from the pattern to help us while they rounded up an LSO. I had the pilot in the rear cockpit read the hyd 1 procedures again as I did the actions. We were south of the extended straight-in at 12,000 feet.

When I lowered the emergency-gear handle, some of the yaw dissipated, but I didn't hear the comforting thumps of gear coming down. Also, there weren't any gear indications. My mindset changed from hyd 1 problems to gear problems, and I was glad 324 was coming to inspect us.

They arrived shortly after we completed our hyd 1 procedures and told us the nose and left main gear appeared down and locked, but the right main-gear brace was broken, and the gear was overextended. They thought the gear would collapse on landing. After some radio-comm confusion between base, chase and ICS, and after

Continued on page 11

Straight to the Moon, Alice!

Illustration by Alan Amon

Somewhere between 20- and 25-degrees nose up, the stall-warning horn went off

By Lt. Scott Craig

I was happily walking onto the flight deck. The sun just was setting, and I would have a pinky launch for my second-ever, night cat shot. We were off the California coast in W-291, and I was CQ-ing in the mighty Prowler. It was a cold start, and we had a standard RAG CQ crew of three: two in the front and a Cat I student in the back for circuit-breaker watch.

I did my normal preflight, checking the CQ items; double-checked the launch bar, hook and tire inflation. I gave a cursory tug on all the boxes and knobs in the cockpit. After start-up, everything appeared normal getting to the cat. We were to be shot from Cat 3. Our launch weight was 50,000 pounds, and our minimum-end speed was 120 knots, which I bugged on the airspeed indicator.

Holdback attached, I taxied into the shuttle and went into tension. I ran power up to mil and started my verbiage: "Tension, mil, strut-lock light on, cat grips up, lights out." Then I started my wipe out; "Good hyds, good oils, good tapes, normal caution, no warnings, feet on the deck. All set?" Everything felt normal to my experienced hands. After an "All set" from ECMO 1, I went lights on. There's the signal, and there's the stroke. All right, back to the litany I had practiced for: "Ugh, good shot, good motors and tapes, good airspeed, 140 to 145, we're..."

But the word "flying" never left my mouth. As soon as we left the deck edge, I knew something was not right. Time compression set in. It felt like the stick was being forced back into my stomach. Releasing the cat grip, I instinctively moved my left hand to the stick to help my right, which I normally would, or should, have used to raise the gear. I looked at the stick for a split second in disbelief, and thought, "Why are you doing this to me?" As I released the cat grip, I could only stammer out, "#%&* This is not normal. This is not normal."

I scanned the flight instruments and was amazed to see the EADI going nose up through 15 degrees. I forced my back against the seat and tried to use every bit of leverage to make that stick do what I wanted it to. I was not going to let this aircraft get the better of me. Out the corner of my eye, I could see ECMO 1 trying to turn off the AFCS. Watching me fight with the controls, he acted promptly, but, as normal, the AFCS was off for takeoff. No help there. Now 20-degrees nose up, and I still was pushing as hard as I could. I went to brain-stem response and no longer possessed the ability to communicate to my crew what I was trying to do. Somewhere between 20- and 25-degrees nose up, the stall-warning horn went off—it goes off at 21 units AOA in the Prowler—and that got me to scan the airspeed and AOA. We were headed, as Ralph Cramden would say, "Straight to the moon, Alice!"

At about 30-degrees nose up, 23 to 24 units AOA, and 120 knots, I felt something snap in the flight controls. I immediately thought FOD, but I regained control of the aircraft. I quickly scanned the instruments and assessed all was well

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with the engines and hydraulics. I saw the airspeed go through 150 knots, and I remembered the gear. ECMO 1 gave the airborne call and, a little later, called 2,500 feet on top. At 185 knots, I cleaned up the flaps and slats and continued the climb-out.

My mind was spinning about 1,000 miles a second. I still was recovering from the incident and time compression, while slowly coming to grips with the situation. I thought, "There is no way I'm going to land on the boat for my second time at night, not knowing exactly what was wrong with the plane, and with a perfectly good divert, North Island, only 80 miles away."

As I started to voice this, ECMO 1 said, "Let's just climb to 12,000 feet, our assigned altitude, and get a heading toward marshal."

Once situated, we talked about the events that had taken place. I related how, at first, I thought it was a hydraulic problem, but after regaining control of the jet and feeling the snap in the flight controls, I definitely thought it was FOD-related. I borrowed ECMO 1's flashlight and did a quick search at the base of the stick for any incriminating evidence but found none. We agreed diverting was the way to go. After a brief report to our rep, we headed to North Island for an uneventful straight-in.

After a shaky walk from the jet, we explained what had happened to our maintenance detachment, while the aircrew looked up our stall airspeed and ejection envelopes. Maintainers searched the jet for 45 minutes and found the filter for the pilot's radar screen under the left-rudder pedal. The screen is a piece of glass 8 inches in diameter, bordered by one-and-a-half inches of aluminum. The screen and the border are three-eighths-inch thick. This filter had a shiny notch in it where the stick had been jammed. The whole thing was bent about five degrees and looked like a semi-flattened taco shell.

The filter had popped off the radar screen during the cat stroke and was wedged between the stick and the radar screen. I was able to bend the filter enough to have it pop out, which freed the flight controls. To my knowledge, the screen has fallen off on several Prowlers, but this was the first one that had jammed the flight controls. After reviewing the plat tape, although it seemed like an eternity, the whole event, from cat stroke to regaining control, took just four seconds.

Several lessons were learned. When I preflight the cockpit, I have a new way to check the screen: turning and pulling versus just pulling. I make sure every knob, button and box is secure and accounted for.

I reviewed our communications during this event. I was too preoccupied to say much, but, after I recovered, there was a lot of silence. I later found out our backseater had squeezed the lower ejection handle so hard he practically tore it in half, and he had planned to pull the handle if the airspeed went below our minimum-end speed of 120 knots. Good for him; at least he had a game plan. I recovered at 120 knots. He was going to eject when he saw 119 knots and no change in the apparently (to him) uncommanded nose-up pitch. He told me later how nice it would have been to hear some comforting words from the pilot like, "I've got it." My fault. I'm glad he stayed with us, but I wouldn't have blamed him had he punched out. We heard nothing from tower.

Should we have ejected? That thought did not cross my mind until we had passed 6,000 feet. We calculated our stall speed as 107 knots, based on the aircraft's gross weight. I regained control at 120 knots, 30-degrees nose up. We were bleeding off airspeed very quickly at that point. In the Prowler, the pilot, whether he is command ejected or ejects himself, suffers a 1.2-second delay before his seat leaves the aircraft. We had less than two seconds before the aircraft departed controlled flight, so I quickly would have been out of the ejection envelope. I have heard stories about pilots who stayed with an airplane long past the time to eject, just to try and fly it away. I never thought I would be one of those guys. I have given serious thought to many ejection scenarios. If I am ever in a similar situation and I don't have control of the aircraft when the stall-warning horn blares, I would decide it's time to get out. I may not be the one pulling the handle, but I'll be saying the "E" word. A $70-million plane is not worth three lives.

Lt. Craig flies with VAQ-135.

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BETTER *Continued from page 7*

reviewing the NATOPS gear-malfunction table, we decided the right gear was overextended, not stubbed or cocked. A short-field arrestment was the course of action, and we prepared for the min-fuel, in-flight engagement. I lowered the flap handle to half, saw the slats light, and explained to the pilot in the rear cockpit that this was normal, because we were on emergency flaps.

We set up a racetrack pattern on the extended straight-in and discussed possible scenarios for ejecting or staying with it. We burned down fuel from 1,100 to 600 pounds. At 600 pounds, I began to intercept and fly a normal glideslope to the wire with LSO assistance. I could not maintain the glideslope at near-idle conditions, because of what I thought was lack of speedbrake drag from the hyd 1 failure. I waved off that approach and came in on a lower glideslope on the next try. I went to mil and applied left stick as we touched down and heard the bolter calls as the aircraft began to swerve right. Rudder and left stick appeared to control the aircraft, and I began to bring it back to the left while calling, "I got it." I continued to overcorrect to the left and flew it off the deck while angling left across the runway. The LSO was calling, "Keep it climbing," and he told us our gear had collapsed on landing. I began a turn to downwind.

A Hornet pilot above us, with his own emergency, called, "I have to land now." I called that I was extending on the downwind and called to make our final approach. We had between 200 and 300 pounds of fuel. We would keep a bolter on the runway for this pass—certainly better than a flameout. Again, I flew a low-ball glideslope, with LSO assistance, and made sure the endgame looked a little lower than the bolter. We engaged the gear before main-gear touchdown and rolled to a suprisingly smooth, right-wing-low stop on centerline.

I shut down the engine and called, "Get out quick," on the ICS. I then shut off the batteries and egressed.

So what do you do, as a single pilot or crew, to prepare for the unexpected? In this case, a combination of poor landing-gear-uplock design and possible proximity-switch failures caused a system failure within the established flight envelope. Not much you can do about that, is there? Well, yes and no. Although you can't prevent similar failures, you can be prepared to deal with the ones most likely to occur in your aircraft. Every aircraft has weaknesses—some more than others, as most Goshawk drivers can attest. In the Harrier, it may mean knowledge of engine systems and all Hornet drivers know the bingo numbers. In the T-45, it means knowing your gear systems and emergencies.

The current Goshawk doesn't do well with an overextended gear, a blown tire, a crosswind, or a host of other ground-handling issues. The T-45 test team is working hard with the training-wing fleet and a dedicated Boeing team to improve our aircraft's reliability and performance in these areas. Significant improvements are on the horizon. I know this is a lame answer for anyone flying the jet today, but we are trying. One quick fix—using 350-psi nose tires to improve ground handling—has already been tested with promising results. Wet runway and crosswind testing will follow shortly. Greater ground-handling improvements are expected from a yaw-rate feedback to a nosewheel-steering box that will be tested in the near future. Fuel control and inlet-design efforts will make the engine less susceptible to surging. A SAHRS replacement will improve reliability, and finally, testing is underway to remove the uplock limits resulting from this mishap.

With or without system improvements, the success of any flight comes down to aircrew knowledge, judgment, and basic flight skills. Know what a crosswind feels like in this aircraft, know when you need to take it around, and know when you can stick with it. Above all, have a plan for a landing-gear emergency. An airborne visual check is critical. Know the difference between stub, cocked, trailing, retracted, and overextended, and be able to pull that out of a wingman's description. How will you brief the ejection scenario as you burn down to min fuel for the approach? At what fuel state will you accept a bolter and keep it on the deck? I didn't expect to face that one. The brief is not in your PCL, but it's critically important to get right.

LCdr. Hannifin is an FA-18(A-F) and T-45 test pilot at NSATS, Patuxent River, and is the platform coordinator for T-45 flight testing.

Photo-composite by Allan Amen

By Lt. Rich Couture

The day started like any normal one on the boat: I was up early for chow, then off to the ready room for the first brief of the day. I didn't know I would face my hardest decision yet as a new carrier-aircraft-plane commander (CAPC) in the Hawkeye.

We were underway for COMPTUEX, operating in the Puerto Rican Op Area, in late September. I had been a CAPC for a month and had a new pilot in the right seat. For the day's mission, we would launch two aircraft on the same cycle. Our aircraft were to be stationed south of the battle group, with the other aircraft stationed north of the battle group, near Puerto Rico. The weather brief called for thunderstorms in the vicinity. It was a warm fall day, and the freezing level was at 14,000 feet. Since the E-2C has a limited weather-avoidance capability, our goal was to maintain VFR. On the climb-out, it was evident maintaining VFR would be a challenge as we encountered patchy skies and buildups. As we climbed to 23,000 feet, we passed through a small layer while picking our way around the clouds. Eventually, we found an open area that allowed us to station VFR. We could see the water from about 23,000 feet.

After the cycle was complete, the aircraft to the north returned to the ship. However, we were to remain on-station for another cycle. Our mission required us to maintain communications with various units on the beach. Unfortunately, in our current location, we were unable to do this. After talking to the departing Hawkeye, we moved our station to the north, where they had been. That area was clear, with negligible turbulence, and they had good comms with all the organizations on the beach.

We began picking our way north to our new station, but this turned out to be easier said than done. As we tried to find a way around the buildups, we realized the clouds had moved in. There was no way around; the buildups had surrounded us. To get to our new station and complete our mission, it was necessary to punch through the clouds. After the CICO confirmed no traffic was ahead, we entered the least intimidating clouds we could find.

As we entered the clouds at 23,000 feet, the aircraft was clean, and we were doing 170 knots, with the engine anti-ice and prop de-ice on. Approximately five minutes after entering the clouds, the copilot and I noticed ice building on the leading edges of the wings and props. I said to the copilot, "Let's go ahead and turn on the deicing equipment." These are the de-icing boots on the leading edges of the wings, horizontal and vertical stabilizers. As I reached to turn on the de-icing switch, the plane started to sound as though rocks were pummeling it. In 10 seconds, ice completely had covered the wings, props and windscreen. All of a sudden, I sensed the uneasy feeling of the aircraft going into stall buffet.

Innocent Clouds, or Are They?

feeling of the aircraft going into stall buffet.

I went through the standard procedures for stall recovery. I added power and placed forward-yoke pressure to prevent the nose from pitching up. However, the forward-yoke pressure had no effect. The aircraft nose pitched up to 20 degrees, with the power lever set at MIL. The aircraft started to descend with the nose still pitched up 20 degrees. The VSI indicated 1,000-fpm rate of descent. I pushed the yoke forward, pushed on the rudder pedals, and moved the ailerons left and right, but none of these inputs affected the aircraft. I realized I had no control. Our nose still was pitched up to 20 degrees, we continued to descend at about 1,000-fpm VSI, and our airspeed dropped below 150 knots.

The wing and tail de-ice had run through a complete cycle, no ice was removed. Many different things were going through my head. The most ominous thought was, "At what point, if I have to, do I push the bailout bell?"

As we descended through 22,500 feet, I hadn't controlled the aircraft for about 15 seconds. Since the nose goes up with power additions and goes down with the power off, I decided to pull power, even though we were descending and near the stall buffet. I pulled back the power to idle, and, finally, the nose started to fall through the horizon. The second cycle of de-icing now had finished, and some ice started to come off the wings. As we descended through 16,000 feet, the ice on the wings began to come off more rapidly. We were out of the icing conditions, and I quickly regained control of the aircraft.

As bad as the situation seemed, it wasn't over yet. We leveled off at 13,000 feet to gather our thoughts. We still were in some rain but could see outside and had a visual reference to the water. Things seemed to be getting better when suddenly a bright light lit up the cockpit. Almost immediately, the CICO called from the back-end asking, "Hey, what's going on up there? Our HF radios just went crazy." The CICO then noted a low-torque light on our trailing-wire-antenna control panel. This led us to believe lighting had hit the HF-trailing-wire antenna and the drogue that drags the wire behind the aircraft was lost.

After a long discussion, we went through the procedures for an HF-trailing-wire, low-torque indication. We headed back to the ship, and after landing, took deep breaths and sighed. We had learned more than we wanted on this flight. Icing is nothing to play with, and neither are clouds that look innocent.

Lt. Couture flies with VAW-121.

Photo-composite by Allan Amen

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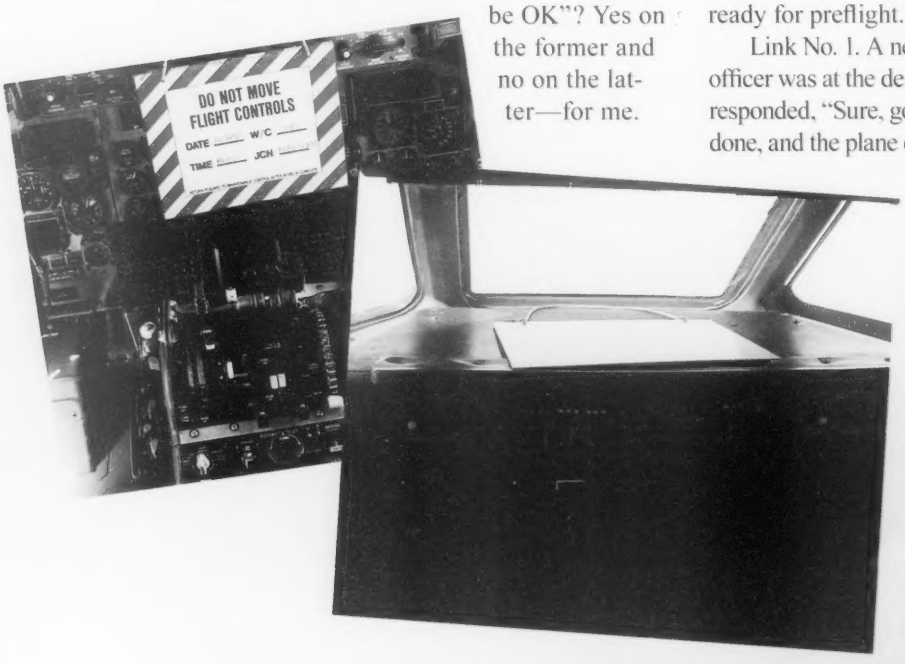
Lt. Couture flies with VAW-121.

LOOK MA—NO HANDS

By LCdr. Greg Kashouty

Did you ever have one of those days where nothing goes right? Have you ever heard the safety quote, "All you have to do is break a link in the mishap chain of events and everything will be OK"? Yes on the former and no on the latter—for me.



I never get quotes right, and, like everyone else, I get bored listening to the safety officer flap his gums with all those platitudes. Well, it was one of those days. I came in to brief, only to find the C-9B wasn't working—something about the spoilers or something—and takeoff may be delayed. However, the aircraft was supposed to be up in an hour (of course, maintenance hours don't coincide with what a pilot considers to be an hour). Being the conscientious copilot that I am, and hoping for the best, an hour later I went to maintenance and asked if the plane was up and ready for preflight.

Link No. 1. A new maintenance-control petty officer was at the desk. Being a hard charger, he responded, "Sure, go for it, sir. Maintenance is about done, and the plane captain is doing his preflight."

Link No. 2. I went to the plane, and the only person around was a plane captain. I assumed he had finished his preflight or was close to completing it (Yeah, I know what you get when you assume anything). I found out later that he was waiting for maintenance to finish, so he could begin his preflight. As I continued my outside preflight of the aircraft, a maintainer entered and turned on the hydraulics, and I didn't notice.

Link No. 3. One of the maintainers working on the plane had moved the "Do not move flight controls" placard from the cockpit controls and placed it facedown on the glare shield where no one could see it (especially me).

Link No. 4. As I quickly did my cockpit-preflight checks, I heard a little voice say, "Slow

down, something is not right, we are not in Kansas anymore."

Link No. 5. As I started the prestart checklist, I didn't notice the spoiler handle was in the armed position, and the hydraulics were on. This is not the normal position during preflight—this should have clued me in to something but didn't. I moved the throttles to check the takeoff-warning horn. On the C-9B, moving the throttles to the mid position does a few more things, not the least of which is to automatically retract the spoilers.

I watched in horror, like a slow-motion scene in a movie, as the spoiler handle retracted. It hit me why things seemed wrong: maintenance still was in progress. I quickly jumped up and ran to the door. The maintainer was sitting on top of the wing with his hands above his head and a look of fear on his face. He had come to the plane after I went inside to do the cockpit checks. As fate would have it, his hands had been under the extended spoiler panel that he was working on. He had taken his hands out moments earlier to get a tool.

How could this have been prevented? For starters, better communication between the airframes division, maintenance control and me. When I walked in to maintenance control visibly upset, I learned from the maintenance-control chief that if I had asked him, he would have told me the plane was not ready. Well, thanks chief, that's a big relief—better late than never. The plane captain sitting in the plane could have said the plane still was being worked on. He saw me preflighting and should have questioned me when he knew the plane was not ready.

Someone should have left that nice helpful placard with the big red letters, saying, "Don't move flight controls," in its proper place—on the flight controls. The very gung-ho petty officer who ran in and turned on the hydraulics could have mentioned something. Maybe the guys who came back out to the plane could have come aboard to see if some gung-ho copilot was in there messing with stuff. Finally, I could have paid attention to my surroundings, noticed something did not seem right, asked questions and told someone of my intentions. I could have listened to that little voice that was screaming at me. This incident could have ended in disaster, involving lots of people, tons of paperwork, and the loss of a person's hands.

LCdr. Kashouty flies with VR-57.

Single Engine in the Gulf, **No Problem**

By Lt. Dan Hughes

Everything began normally on a routine night AIC hop in the Arabian Gulf. The weather was typical: a balmy 98 degrees Fahrenheit, with 100 percent humidity. The launch and the flight went according to the brief.

The real fun began after I had put my "landing hat" on. Shortly after checking into marshal and receiving my instructions, CATCC asked me to mark my position. After doing so, they requested I push from that position to speed the recovery. This procedure was common, so I continued inbound from 20 miles.

I checked in with approach while passing 5,000 feet, "Approach, 405. Platform."

In her calm, yet alarming voice, Betty said, "Engine right. Engine right!"

Speed brakes in, decreasing my rate of descent, and obeying the minute-to-live rule were the first things on my mind, even though the ever-present engine cautions on my DDI still were patiently awaiting my full attention. While leveling off at 1,200 feet, I requested permission from approach to switch frequencies to my squadron CATCC rep. At this point, I was level at 1,200 feet, at 250 knots, and 8.5 miles out. Because I was close to the boat, I decided to keep the approach frequency in my primary radio and the rep in my auxiliary radio. Approach requested a climb to 2,000 feet and vectored me 90 degrees off the final bearing. Meanwhile, I was explaining to my rep that I now had a right-engine flameout. Fortunately, the motor still seemed to be turning.

As the rep talked me through the NATOPS procedures, I retarded the right throttle to the off position. I noticed that to maintain level flight, I needed military power to min burner on the good engine. Next, approach called, "405, can you accept an approach from your current position?" You can probably imagine what my less-than-enthusiastic reply to that idea was. As I tried my best to tune out approach—except for any safety-of-flight calls—I again began going through the emergency procedures for a flameout. I cranked the right engine, and, thankfully, it spooled to 38 percent, which would provide adequate hydraulic power to the accessory-hydraulic systems.

Great, now I can lower my gear normally, but I won't be able to raise my hook or use normal brakes in the landing area. Meanwhile, I was doing my best to adhere to the vectors approach had given. After going through the procedures and talking to approach, I dirtied up and said I would be doing a half-flap approach. I also noted I would need a tow to get out of the landing area.

As I entered the downwind pattern in the landing configuration, I again noticed it was taking min- to mid-range afterburner just to maintain level flight. By this time, approach was anxious to get me on deck and out of their hair. OK, landing checklist complete, gross weight at 32,700 pounds—I turned to final. At five miles, I received needles and called, "Up and right." Approach concurred, and I proceeded on my mode 2, single-engine approach. As I neared glideslope and nosed over, I realized my sweet spot was going to be a very small range between mil- and min-burner. Boy, it just doesn't get any better than this!

"405, at three quarters of a mile, on and on, call the ball," approach called.

"405, Hornet ball, single engine, 4.4," I replied.

Using min burner and left rudder, I managed to keep the needles relatively centered. Paddles must have seen the afterburner, because at "in the middle" to "in close," he called, "Easy with it." Typically, with an emergency, that is a cleared-to-land call—I landed uneventfully. As I got towed out of the landing area, I breathed a huge sigh of relief.

After investigating the flameout, our top-notch, two-time Golden-Wrench-award-winning maintenance department realized 405's right-main fuel control had failed. The aircraft was repaired and flew the following day.

As everyone knows, hindsight is 20/20. I realized after landing that a bolter or waveoff, for any reason, would have been impossible. My aircraft's gross weight and the extremely high temperatures in the Gulf caused a large reduction in available thrust. As the pilot in command, I allowed myriad things to paint me into a corner. Throughout our entire time in the gulf, we worked tank states, so I never really questioned my fuel state. Later, I learned the NATOPS recommended gross weight for landing, with the temperature that night, was 29,600 pounds. That means I would have had to jettison my external stores, which included two drop tanks, and I would have had to call the ball with a 1.5.

It is hard for a Hornet pilot to dump gas, but as one can see, it may be necessary. Otherwise, the call is to divert 150 miles, single-engine, with no way of knowing what caused your other engine to flame out. Per NATOPS, the best way to handle this particular situation would have been to jettison the external tanks and dump down to a 3.5 fuel state and establish the aircraft-handling characteristics before executing the approach. As the pilot in command, you should take time to evaluate all the factors and not rush to land, because you may get only one shot at the deck.

Lt. Hughes flies with VFA-87.

Photo by PH3 Carrie-Anne Gonzalez
Retouched by Allan Amen

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What Happened to My Beautiful Day?

By Ltjg. Chris Escajeda

Photo by PH3 Anthony Haley

This story isn't about landing a stricken plane on deck with one engine out, no gas, at night in a hurricane. Just the opposite—but I still did something I never thought I would do.

I was an H2P on my first deployment. We were somewhere in the middle of the Pacific, en route to Okinawa. Our SH-60 crew was scheduled for a DTE flight against our task force. This included attack runs against the group to give the boat guys some practice at querying low, slow-flying aircraft. It was a good-deal flight, compared to the SSC missions we had been doing.

The weather hadn't been cooperative this day: lots of rain and a solid layer at about 500 feet. The captain and OinC decided they didn't want to launch us until the weather improved. My HAC, AW and I decided to continue with the brief and preflight, hoping Mother Nature might give us a break. I returned to my com-

fortable spot on the wardroom couch to finish watching the afternoon movie.

A few hours later, the phone rang—it was my HAC. "Hey, have you looked outside? It's beautiful right now," he said. "Let's go."

Zipping out to the flight deck, I was amazed the weather had cleared so much. Forty-five minutes later, we were airborne and ready to start our simulated attack runs. The ASTAC came up and said that before we started the DTE portion of the flight, he wanted us to investigate some contacts 70 miles southeast of the group. We rogered up and bustered out to datum. While en route, I began to notice the weather again. Those beautiful, clear-blue skies were beginning to disappear behind a layer that was starting to build. I mentioned it to the crew, and we decided it wouldn't be a factor since we could work to the north, where it still was clear. The contacts turned out to be the usual group of fishing boats. Oh well, on to the fun stuff.

At 40 miles out, we started our first run on the ship. At 10 miles, the weather had deteriorated even more. We told the ASTAC we would be continuing north for the second run to avoid some of the goo to the south. Again, we flew to our initial point for our next run. On the transit out, we talked about the decreasing ceiling and decided to make this our last run and to get on deck before we were below minimums. As a last resort, we figured the ship could drive north where it still was clear.

After the second run, we told the ASTAC we would like to land early to avoid the deteriorating weather. He acknowledged and passed our request to the bridge. As we waited for flight quarters to be set, we orbited at 400 feet and 2 miles off the stern. Before I knew it, I no longer could see the ship. My HAC and I decided to practice a few approaches to the ship to check the visibility. Shooting the TACAN approach, we waved off at a quarter-mile. The ship barely had come into view at the MAP. As we turned downwind, paddles gave us a green deck for landing. I had been at the controls until this point, so it was my approach. Turning in at 1.2 DME, I flew the numbers to the MAP, but the ship wasn't in sight. On the climb out, I began to feel a little funny and started to get the leans.

"No sweat…" I thought, "It's not too severe. Just fly the instruments and you'll get over it." Big mistake. Halfway through the next approach, I really started to feel it. So much that I finally decided to 'fess up and pass control of the aircraft to the left seat. Again, no ship was in sight. Our best bet was to climb above the layer and to see if we could find a sucker hole to which we could vector the ship.

We popped out above the layer at 3,000 feet and continued to 5,000 feet. Looking around, we saw nothing but a solid blanket of cotton. What happened to the clear skies to the north? So much for plan B. Our crew talked it over as we slowed to max-conserve airspeed. Taking some advice from the OinC, we decided to do an emergency-low-visibility approach (ELVA) in conjunction with a smoke-light approach. I couldn't believe it. This wasn't supposed to happen. Those approaches are something you hear about maybe once or twice while in the FRS but never expect to use. But there we were, getting vectors from the ASTAC and hearing "Smoke away, now…now…now." The approach went well. We picked up the first Mk-25 at a quarter-mile and then got a visual on the ship's wake. We followed it in and were able to land safely—just in time for dinner.

So, what did I learn? Things could have been a lot worse. Despite our situation, we still had plenty of gas, it was daytime, and our aircraft was working 4.0—not to mention having a great ASTAC. Had anything been different, we might have gone swimming.

We did make some good decisions. Our crew coordination was great. I handled the comms while the HAC concentrated on flying. The AW provided great backup to the ASTAC with the radar.

Fly what you brief. If you have vertigo, 'fess up right away; don't wait for the middle of an approach. Decide early enough so your copilot has time to acclimate himself to the environment. Never take the weather for granted. It can come up faster than you think and bite you when you least expect it.

Ltjg. Escajeda flies with HSL-37.

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Ltjg. Escajeda flies with HSL-37.

ORM Corner

I Heard Something

By Lt. Marco Giorgi

It was another day of flight ops on cruise, mostly unit-level training, and it started to feel like Groundhog Day. We were scheduled to control air intercepts and a self-escort strike, just a walk in the park for our stacked crew. We had three qualified mission commanders in the back of the aircraft handling the mission, including our CO. Everyone except the copilot had cruise and combat experience.

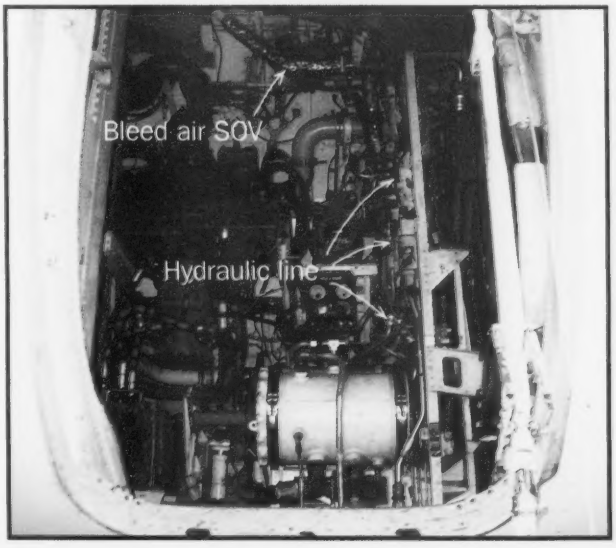
Immediately after the brief, our CO became the voice of reason and experience, reminding us not to allow ourselves to become lax. His words couldn't have come at a better time. Despite all our experience in the airplane, as we set to fly a benign unit-level training mission, our biggest enemy was a lax attitude.

We just had started our engines when we heard six short blasts of the ship's whistle, followed by a 5MC announcement, "Man overboard! Man overboard!"

What we didn't hear was, "This is a drill. This is a drill." This was no drill. One of the maintainers from the S-3 squadron had been blown overboard off elevator 2. Everyone reached for their radio-select panel to listen to the recovery details on tower frequency—everyone except the skipper. He was focused on a noise he heard coming from the forward equipment compartment (FEC). Of course, nobody else in the aircraft heard it.

The skipper immediately brought us back to reality. Since I was sitting in the seat nearest the FEC, I went forward to investigate. As I entered the FEC, I could hear the noise: a loud hissing growing louder as I went forward. After passing the main-entrance hatch, the sound started to decrease. I backed up and started to investigate. I checked every line that carried any type of gas and found the leak at the bleed-air shutoff valve in the fuselage. The air coming out was very hot and near a bundle of wires.

We called the troubleshooters and discussed the problem. We concluded the leak would not be a quick fix. They said there was a great potential for fire. That was enough for us. We called it a day and went below



ORM Corner

Please send your questions, comments or recommendations to Ted Wirginis or to Capt. Denis M. Faherty, Director Operational Risk Management.

Mr. Ted Wirginis' address is: Code 11, Naval Safety Center, 375 A St., Norfolk, VA 23511-4399, (757) 444-3520, ext. 7271 (DSN-564), E-mail: twirginis@safetycenter.navy.mil

Write Capt. Faherty at OPNAV Code N-09K, 2000 Navy Pentagon, Rm. 5E-816, Wasgington DC 20350-2000, (703) 614-8430, (DSN-224), E-mail: faherty.denis@hq.navy.mil

to debrief the chain of events that could have led to one of those hair-raising *Approach* articles. Or it might have been one of those editorials from Grandpa what's-his-name in that other magazine.

What could have happened is scary. The leak was in an area packed with electrical wiring, hydraulic lines, filters, reservoirs, nitrogen lines, and a radar tube that blasts out 1.21 jigawatts of power—when it's on. (Okay, not quite that much power, but it's a lot). It is adjacent to the area through which we would have to egress should a fire get out of control. A fire in the E-2 is bad enough, but a fire in this area of the E-2 can be catastrophic.

However, thanks to one crew member's situational awareness, assertiveness and communication, we broke a chain of events that could have been fatal. Yes, we lost a sortie, but we possibly saved five lives and an expensive airplane, and avoided a bunch of paperwork. All that aside, what did I learn from this episode?

First, an experienced crew who doesn't feel overly tasked can be a dangerous thing. A lax attitude can be a killer. Second, I learned you have to pay attention to what deserves your attention. You can't allow yourself to be distracted. Third, I realized when anyone breaks a chain of events, it can lead to disaster. You just need to listen, not only for strange sounds but to other people's input. Sure, it's easy to listen to the skipper. When he says he heard something, you check it out. How about listening to a nugget? If you want the kind of response a skipper gets, you have to maintain your situational awareness, be assertive, communicate, and exercise some leadership (speak up and get someone to act).

We brief ORM before every flight, but the real test of a solid program is to practice it as a matter of course, automatically doing the things we brief. In this case, we did, it worked, and I flew later that day anyway. Nothing lost, and a lot was gained by using ORM the way we were trained.

Lt. Giorgi flies with VAW-124.

By Lt. Rich Archer

I was a salty RAG student, almost two-thirds through the grueling FA-18 syllabus. After a successful strike detachment, our class had a week to relax before anxiously jumping into the fighter-weps phase of training.

It was Friday, and the only thing between that morning and an epic weekend in San Diego was my first solo BFM (basic fighter maneuvering) hop. I rolled out of the rack in a great mood just after 0930. The hop was in the early afternoon, and I had nothing else on my schedule, other than the Martini Ranch in downtown San Diego at 2100—it didn't get any better than that.

As I drove to the squadron and through the peculiar aromas of Lemoore and Hanford, I couldn't think of anything but my weekend in the big city. I'd make quick work of the poor, helpless instructor who happened to be my wingman for the day, and roll down to San Diego in time to meet my buds for happy hour.

I quickly set up my briefing room and received a few last-minute tips from my friend who had just flown a BFM hop that morning. Unfortunately, my instructor was a bit more long-winded during the brief than I had hoped for. After all, what more could I learn than what's printed in the Top Gun Tactical Manual?

After a few of my typical, RAG-student questions, we finally wrapped up the brief with only two minutes to spare before our walk time. I hastily wrote down a few notes and headed directly for the SDO desk to get our lineup. I was way behind my usual timeline. I still needed to complete the final and mandatory portion of my personal preflight checklist: a head call. My body definitely wouldn't handle 7.5 Gs if I didn't adjust my gross weight before takeoff.

Relieved to have finalized my checklist, I literally sprinted through maintenance to read the book. I went

through the PR shop, carelessly threw on my flight gear, and headed directly for the jet. During my cursory preflight, I heard the distinct hum of my instructor's APU. He was about to start his engines, and I hadn't even begun to think about strapping in!

I worked my way through the start-up checks much faster than normal but still didn't manage to make up any time. I finally met the impatient instructor, in marshal, after my record-breaking, start-up sequence. He called for taxi and we proceeded to the duty runway. Much to my dismay, tower immediately cleared us for takeoff. I still hadn't finished plugging in my radar sets as I rolled across the hold-short line and set my jet in position.

We launched as a section and pressed toward the working area. My lead pushed me out to combat spread about the time we leveled off at our final cruising altitude. My head still was spinning, but I finally managed to get all my "stuff" in one sock and put out the helmet fire which was burning a giant hole through my skullcap. The transit time to the area proved to be a nice break in the chaos. I took a deep breath and popped off one side of my oxygen mask to grab a drink of water and relax.

As I looked over the notes I had jotted onto my kneeboard card, I began to get that funny feeling: My head felt as if it was buzzing, and I began to have trouble understanding the simple notes I had just written. I vaguely was familiar with this feeling but couldn't quite pinpoint it. It took a few seconds for me to realize I had felt this way three years ago in that silly pressurization chamber and now was suffering from hypoxia.

Without any hesitation, I rapidly snapped my oxygen mask back on my helmet and began to breathe heavily. The strange sensation passed, and my head finally cleared after 15 seconds or so. I glanced at my cabin-pressure gage and was astonished to see it read nearly 21,000 feet. After some simple troubleshooting, I found the obvious cause of the problem—my cabin-pressurization switch was in the RAM/DUMP OFF position. How could I have forgotten to double-check such a simple step in the prestart checklist?

The rest of the flight went without incident, except I ended up being the poor, helpless part of the equation.

I've taken away a few good lessons from this eye-opening incident, which easily could have resulted in a serious mishap rather than a simple *Approach* article.

Never feel rushed to breeze through your checklists. They are written for a reason and may help you catch a mistake that could save your life. Take a few extra minutes to make sure the checklists are complete.

Keep your mind in the game. My preoccupation with the big weekend definitely contributed to my bonehead mistake. I'm quite certain almost every aviator has been guilty of this fault at one point. I'm not trying to beat a dead horse, but always remember it's not over until you walk out of the debrief.

I broke NATOPS by taking off my mask during the flight. I don't know any TacAir aviator who hasn't been guilty of this at one time or another. If you find yourself wanting to bend the rules, please take a second or two to think before you act.

Finally, the low-pressure chamber is invaluable training. There's actually more to it than just good laughs and bad flatulence.

Lt. Archer flies with VFA-192.

Analyst comments:

Hypoxia is simply reduced oxygen flow to the tissues resulting in decreased function of these tissues. Brain cells have an increased requirement for oxygen and are the most sensitive to hypoxia.

A review of reported Naval hypoxia events for the past year reveals 11 events. Hypoxia has been identified as causal in one fatal mishap. As we all know, the current methods used to prevent hypoxia are pressurized cabins and supplemental oxygen. The rules governing preventive measures for hypoxia are found in chapter 8 of OpNav Instruction 3710.

We have a voluntary hazard-reporting system that is good at obtaining information about mechanical failures that cause hypoxia, but human-error events like the one in this story frequently go unreported because of fear of retribution. BZ to the author of this article for his determined attempt to educate others and prevent future mishaps. I hope other aircrew who identify potentially hazardous events will stand up and become educators, improving operational safety.

Cdr. Nicholas Webster, MC, MPH, is an aeromedical analyst at the Naval Safety Center.

The Stor

Photos by Matthew J. Thomas, PH2 Donné McKissic and PHAN Darryl I. Wood
Composite by Allan Amen

"Hey, where are we going?"

oaway

By Lt. Steve Ready

I was a nugget on my first cruise, reading Approach and saying things like, "Can you believe this bozo?" and "I would never do something that stupid." Little did I know I had just placed a curse on myself.

Later that day, I briefed with my JO crew and walked for our mission-tanking flight off the coast of Australia. I looked forward to getting airborne, having a productive flight, and honing my skills behind the boat.

My War Hoover crew and I settled in our seats and started engines. The forces of evil seemed to be mounted against us because our flight-control system failed its post-start check. I shut down the No. 2 engine and watched our maintainers work furiously to solve the problem. At the same time, the air boss politely inquired whether we were up or down. Since we were parked in his landing area (LA), he needed us to taxi clear or launch. Unfortunately, it didn't look like our electrician's hard work was going to fix the problem in time to make the launch, so we cried "uncle" and told the boss we were down.

With the pressure of the impending recovery building, the handler wanted to save time by having us start No.2 and taxi out of the LA instead of shutting down and getting a tow. The rest of the crew already had exited the jet, which left just me and the rightseater. I gave the signal to shut the door, started the No.2 engine, and armed our seats for the trek up the flight deck. After our plane captain handed us off to the yellowshirt, we began taxiing to the LA, and I suddenly felt a strange tap on my shoulder. I could see my buddy's hands were folded neatly in his lap, so I was a little confused.

"Hey, where are we going?" said the muffled voice of a maintainer. He was staring at me with a look that said, "You are so stupid," and "Wow, this is an interesting view of the flight deck," all in the same expression.

I calmly replied, "To cat 1. Better sit down and get ready for the ride of your life." Ha ha, hee hee, hmmm, errrr—so much for my aspirations as a big time, stand-up comic. He was not amused; go figure.

Taxiing around the flight deck with maintenance personnel (who aren't qualified or equipped to fly) in a jet with ejection seats that are armed and dangerous is never a good idea. My rightseater and I quickly safed our seats, told the maintainer to sit down, and decided to continue taxiing since we were near our new tie-down spot.

Ah, the lessons we learn from our mistakes. This is the big lesson learned here: Always check that the tunnel is clear, my Viking brethren, before giving the signal to shut the door. Simple enough, and something that I now do religiously.

It is better to learn from other people's mistakes than committing our own variations of the same. Therefore, I won't be offended when some nugget on his first cruise reads this and quips, "Can you believe this bozo? I would never do something that stupid."

Lt. Ready flies with VS-38.

Some Things **Don't** Look Better Through **Goggles**

By Ltjg. C. J. Warren

It began as a routine nighttime SSC flight. The OinC was the HAC in the ATO's seat; I was in the pilot's seat, and our junior aircrewman was in back. Since it was our last month of a Mediterranean deployment, we tried to complete as much training as possible. After we provided the ship with a surface-surveillance picture, we started rebasing our night doppler approaches. After completing three approaches each, we climbed to 500 feet AGL and donned our NVGs.

We practiced a few emergency, low-visibility approaches (ELVAs), which gave us time to acclimate to the goggles before we started the NVG dopplers. I adjusted and readjusted the position of my goggles several times during the ELVAs. While I had the controls, I set them far away from my face, so I easily could see the instruments. While my copilot had the controls, I positioned the goggles as close to my face as possible to better see outside.

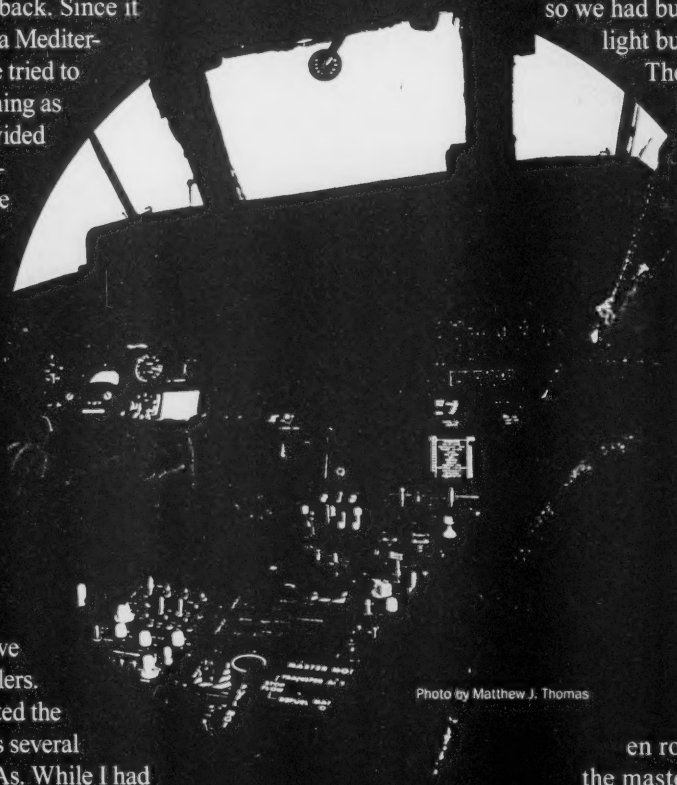


Photo by Matthew J. Thomas

As soon as the ELVAs were finished, we told the ASTAC we were going to do a few NVG dopplers. It was 15 minutes before the scheduled flight quarters, so we had burned enough fuel to be light but still had plenty remaining. The HAC passed the controls to me, then completed the automatic-approach checklist while I set up for a doppler approach. With the checklist complete, the HAC verified I was ready and engaged the automatic-approach system. As I watched the instruments, I realized the goggles still were close to my face, and I had to strain to see the instruments below them. Everything with the aircraft remained normal.

Passing through 120 feet, en route to 80 feet, we saw the master-caution light illuminate. Immediately, I disengaged the automatic-approach system and began to wave off. As I smoothly pulled up on the collective, my eyes were glued to the

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radar altimeter. We still were dropping. I wondered if we had lost an engine or something, until I realized the collective wasn't coming up. The HAC initially noted the AFCS-degraded caution but not the boost-servo-off light saying, "AFCS degraded, wave off, and we'll try again."

As we descended through 90 feet, I began to yank up on the collective and responded, "No, I'm boost off." Now that I was pulling harder, the collective began to rise, and the radar altimeter crept upward again. Once we had established a climb, I lowered the nose and picked up forward airspeed.

> ...the goggles were so close to my face, I couldn't clearly see the caution panel.

After the aircraft was stabilized, the HAC inspected the caution-advisory panel, from under his goggles. He found the No. 2-RSVR low, AFCS degraded, boost-servo off, and SAS-caution lights were all illuminated. The HAC decided this indicated a leak in the pilot-assist servos. Meanwhile, the goggles were so close to my face, I couldn't clearly see the caution panel. I wasn't about to take my hands from the controls to adjust the goggles, so I concentrated on altitude and airspeed.

I informed the copilot, "I can't see the caution lights. If you see a No. 2 hyd-pump light, I need you to turn off the primary servo" (that's the next step in the emergency procedures). I began turning toward the ship as he broke out the emergency-procedure checklist and went through each item. We also told the ship of our situation and said to set emergency flight quarters.

Since we still were boost off, and the moon was very bright (80-percent illuminated), we decided to degoggle as a crew. As the HAC took off his, I asked a particularly stupid question, "Why didn't the backup pump come on?"

He answered with a bit of surprise, "Because the backup pump won't come on for a pilot-assist-servo leak." That's when I realized I had lost total situational awareness. Unable to see all the lights on the caution panel, I hadn't comprehended which caution lights my copilot said were on. That was enough to get me back in the game. The HAC finished degoggling and took the controls as I removed my goggles. Since we were in the middle of the Ionian Sea without a nearby divert field and getting low on fuel, we decided to head to our ship. We requested winds off the nose, or slightly to port, and a clear-deck landing. The ship quickly set flight quarters while we took a little extra time in the air to discuss waveoff scenarios and our limitations during shutdown.

The HAC took the approach while I called altitudes and closure. The approach was slow but smooth, and, as we came over the flight deck, I guided him forward as the LSE signaled us in. We landed and shut down without incident.

Postflight inspection showed no significant hydraulic leaks. It later was decided a faulty low-reservoir switch in the No. 2 hyd pump set the LDI system in motion. The pump was removed and replaced, and there were no other incidents. So what is there to learn from a successful outcome?

Malfunctions happen when you least expect them. Six dopplers were completed without incident. Always be in a position to deal with an emergency. Having my goggles set close to my eyes restricted my view of the instruments and gauges. Communication is key: Even a stupid question can be beneficial. It got me thinking more clearly about the situation. Taking the time to discuss our options helped us make the best decision. Talking about the landing before actually beginning the approach had us mentally prepared to wave off.

Night-vision-goggle operations present a new and exciting environment for the LAMPS community. When the aircraft is operating 4.0, they provide additional visual cues that are a vast improvement over staring at darkness for three and a half hours at a time. On the other hand, when an emergency arises, they offer a more restricted field of view inside the cockpit for the pilot and copilot, and they can detract from situational awareness during an already tense moment. Take the time to think of how you would handle an emergency while wearing goggles. Are you ready?

Ltjg. Warren flies with HSL-46 Det 1.

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MICROFORM EDITION.

2ndLt. Jeff Davis

BRAVO Zulu

They say pilots never forget the first time they solo. For 2ndLt. Jeff Davis, an Air Force student aviator assigned to VT-3 at NAS Whiting Field, this saying holds especially true. Halfway into his contact 4401 solo and during level flight in day-VMC conditions, the front canopy of his T-34C shattered. After checking controllability and gathering his thoughts, 2ndLt. Davis contacted the runway duty officer at Brewton Field and made him aware of the problem. He was directed inbound for a precautionary emergency landing.

Despite the wind, noise and unknown cause of the shattered canopy, he made a textbook landing. A post-flight inspection found no evidence of a bird strike or history of canopy problems with this aircraft. 2ndLt. Davis' on-wing, Lt. Nate Walker, said, "I was very proud of Jeff for remaining calm and reverting to his emergency training."

Capt. Andrew Clevenger (PIC), Maj. Gerald Caldwell (PAC), and Cpl. Rogan McIntyre (CC) had a No.1 engine rollback while supporting JTF-6 counter-drug support operations in Utah. The UH-1N crew was completing a final visual reconnaissance of an area west of the Wasatch Mountains, 12 miles northeast of Hill AFB. The aircraft had descended from 8,000 feet to 6,000 feet MSL.

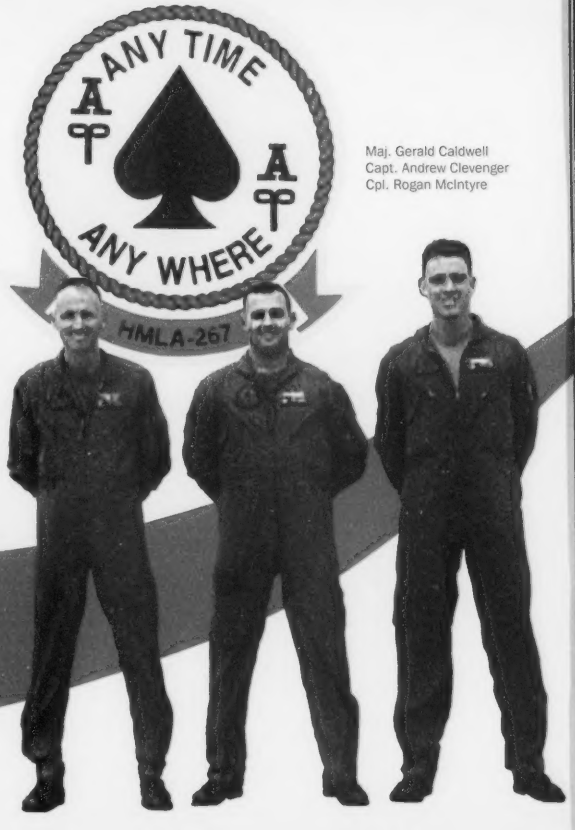
While Maj. Caldwell was leveling out at 400 feet AGL and 50 knots, the aircrew heard an engine roll down. Capt. Clevenger opened his pocket checklist to prepare for single engine flight. Maj. Caldwell started emergency procedures and turned toward Hill AFB. This turn at high-pressure altitude increased the power required, and the aircraft descended. He called out the decreasing No. 1 engine instrument readings over ICS. Maj. Caldwell increased the collective to arrest the descent but quickly ran out of power. Capt. Clevenger called for rotor-RPM-full increase over ICS.

Cpl. McIntyre made sure all the passengers were strapped in and ready for an emergency landing. Maj. Caldwell lowered the collective and gained airspeed to reduce the power required and achieved level flight at 100 feet AGL and 60 knots.

Capt. Clevenger scanned the instruments and looked for suitable landing sites. He noticed the No.1 Ng still was at 50 percent and called for manual fuel over the ICS. Maj. Caldwell and Capt. Clevenger then executed manual-fuel procedures, bringing the No. 1 engine on-line. The Dash 2 Cobra declared an emergency for the Huey and assisted with radio calls to Hill AFB. The crew landed at Hill AFB.

Post-flight inspection showed a cracked P3 line from an over-tightened P3 air filter. The cracked P3 line caused a valve inside the automatic-fuel-control unit to restrict fuel flow to the engine, resulting in an engine rollback. Manual fuel-control bypasses the automatic-fuel-control unit, allowing the engine to provide full power by manually metering fuel using the throttles.

Superior crew-resource management and skill prevented this emergency from becoming a mishap.



Maj. Gerald Caldwell
Capt. Andrew Clevenger
Cpl. Rogan McIntyre

LCdr. Demetries Grimes, LCdr. Mark Coffman, Cdr. Tom Quinn, Ltjg. Dave Riley, and Ltjg. Shane Tanner

The Bluetails of VAW-121 were in the middle of COMPTUEX aboard USS *John F. Kennedy*. The last E-2C of the night had been recovered, and the plane handlers backed it onto elevator one. It then would be repositioned to the Hummer hole after the flight deck was cleared.

As the plane handler backed up the E-2, both props were spinning at ground idle, and another yellowshirt was directing an F-14 about 15 feet in front of the E-2. Suddenly, the F-14 spun on AME2 Randy Ackerman and the members of the prop-safety chain crew. The jet blast almost knocked down PO Ackerman. He grabbed a pad eye and tried to hold on to protect himself. He stood only 10 feet from a turning prop, and jet blast was blowing him toward the prop.

He saw a yellowshirt, who had been directing the E-2, getting blown down in front of him. PO Ackerman tried to grab him—because the yellowshirt was headed straight for the starboard prop of the E-2. As the yellowshirt broke the safety chain, PO Ackerman was unable to let go of the pad eye. He only could yell and wave his flashlight as the yellowshirt got closer to the spinning prop. "All of a sudden I heard a loud noise, unlike any noise that I have ever heard, and I thought the yellowshirt had met his fate," PO Ackerman said.

Cdr. Quinn sat in the copilot's seat and saw the events unfold. Without hesitation, he feathered the starboard prop. The sound PO Ackerman had heard was the feathering of the starboard prop. The blade of the eight-foot prop stopped inches from the yellowshirt's head as he passed through the prop arc.

For BZ submissions, please include a photo of the crew and a squadron zapper along with the article. Photos must be at least 300 dpi and identify the individuals with full name. Send submissions via e-mail to the editor. See inside of front cover for email and mailing information.

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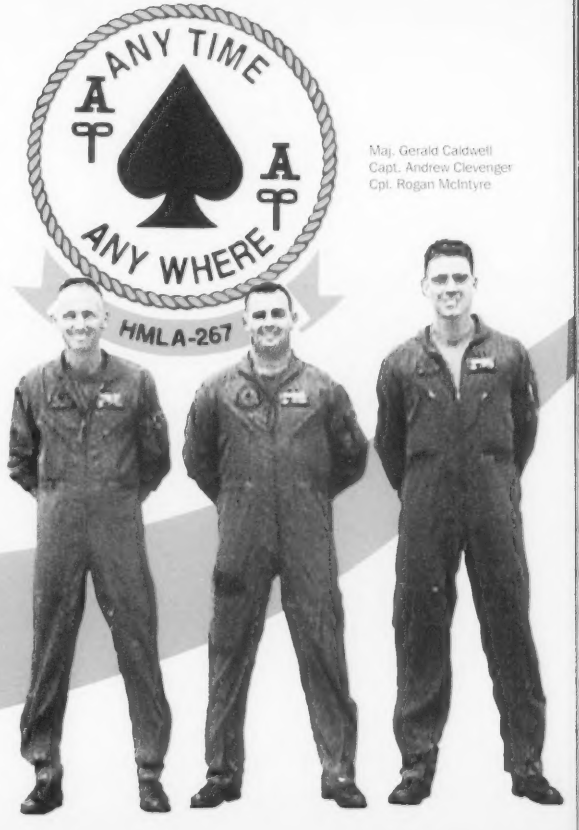

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BRAVO Zulu

During the setup for a 1 v 1 butterfly engagement in the W-291 area off Southern California, the crew of BAT 70 noticed an abrupt change in the stability of their FA-18D. At 17,000 feet, 420 knots and 1 G flight, the aircraft began shuddering violently. The pilot, Capt. David Smay IV, called, "knock it off," and said the left wing tip was oscillating. The WSO, Capt. Neal Wynn II, said the right wing tip appeared to move about 24 inches from the normal position, and the right aileron was moving freely in the relative wind. The crew immediately checked the flight-control-system (FCS) page and saw no abnormal codes or flight-control failures, indicating a probable structural failure rather than an FCS or other system problem. The aircrew discussed controllability concerns, troubleshooting options and divert locations. The lead aircraft's WSO, Capt. Devin Clark, noted a Navy ship in the area as an immediate rescue option, should the aircraft become uncontrollable. The flight lead called for a switch to base frequency to tell them of the problem. The operations duty officer, Capt. Brian Skouse, passed information to controlling agencies, senior squadron officers, and the probable divert location: NAS North Island.

Capt. Smay decelerated to 220 knots and descended to 16,000 feet to assess the situation. Lowering the gear did not affect controllability. However, when the flaps were lowered to half, the aircraft yawed to the left, and the nose pitched up. Capt. Smay said the aircraft required more than one-half right rudder and over one-half left-stick deflection to maintain straight and level flight. As Capt. Smay learned to fly a cross-controlled, side-slipping Hornet, the lead pilot, Maj. Douglas Lang, reported his aircraft was indicating an unsafe, right main-landing gear. Capt. Smay told SOCAL approach both aircraft were having difficulties, and his aircraft would be landing at NAS North Island while Maj. Lang's would return to MCAS Miramar.

The flight set up for a straight-in approach to runway 36 at North Island. Maj. Lang troubleshot his gear problem while on the approach then turned to Miramar for a short-field arrestment. Postflight inspection showed a faulty weight-off-wheels proximity switch that gave Maj. Lang the false gear-unsafe indication.

Capt. Smay had to hold 15 degrees of crab to touchdown to maintain a straight ground track into North Island. The right aileron's hinge-attach point had sheared, allowing the aileron to move freely, which resulted in the oscillations. Both crews and the ODO exercised outstanding resource management in handling simultaneous emergencies and recovering both aircraft safely. A hazrep and an HMR-EI were submitted for the aileron's hinge-attach point.

Capt. Devin Clark, Capt.David Smay, Capt. Neal Wynn, Maj. Douglas Lang, and Capt. Brian Skouse

Mishap-Free Milestones

HS-6
13 years (46,000 hours)

VAQ-135
6 years

VP-40
35 years (228,000 hours)

VS-24
6 years (20,515 hours)

VS-29
13 years

HSL-41
19 years (110,000 hours)

VAQ-138
20 years (35,067 hours)

VP-46
38 years (267,000 hours)

VAQ-131
5 years (7,481 hours)

VFA-22
6 years

VAQ-139
10 years (16,007 hours)

HMM-264
15 years (90,000 hours)

For Lack of a Cotter Pin

By Cdr. Glen Hansen

It was a beautiful spring day, slightly cool and clear all the way to the warning area. I was assigned a PMCF "C" flight after a phase inspection. It wasn't supposed to be an exciting flight, but it sure turned into one.

My trusty Hornet came out of phase early that morning. Maintenance had replaced the trailing-edge flaps, which created the need for a Pro "C." They also did an airframes bulletin against the main-landing-gear axle.

I had flown the night before and had arrived home around 2300. A new pilot was to check-in the next morning, so I got up early to arrive at work at 0730. I wanted to give him an SOP brief and sign him off to fly squadron aircraft. I waited until late afternoon for the aircraft to come up.

As the day inched toward 1600, I became restless. The previous late-night arrival, coupled with early reveille, made me look forward to getting home earlier that evening. I also knew I needed to do this Pro to have enough jets available to start SFARP flights the next morning. Maintenance called and asked if 9,000 pounds of fuel would be enough for the flight. Feeling the time crunch and knowing that a "C" profile did not require a lot of time or fuel, I accepted the fuel load, rather than wait for a truck or a trip through the pits.

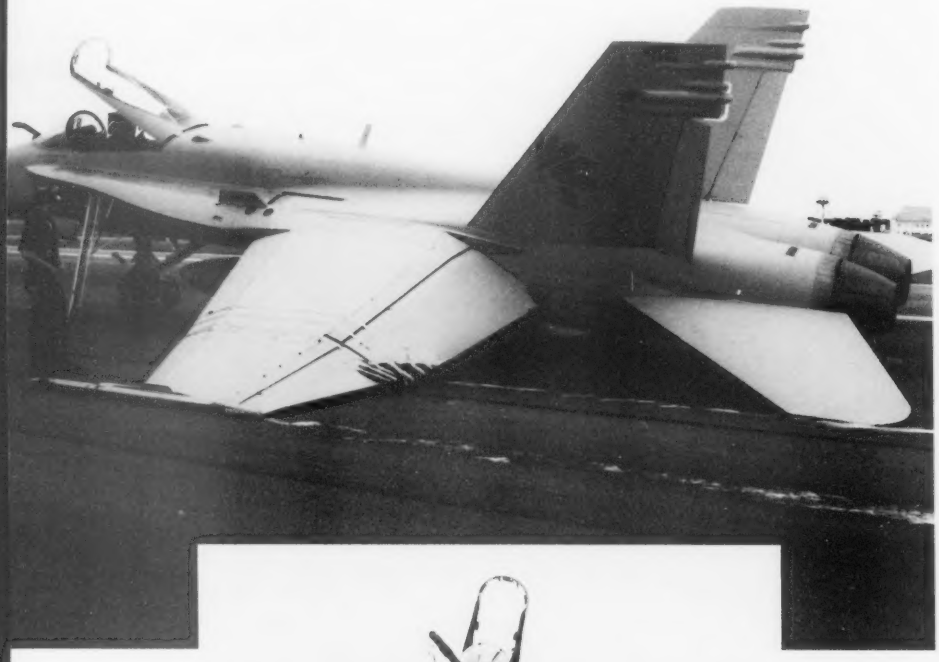
The initial part of the flight went without a hitch. I did the Pro and headed back to the field, arriving overhead with about 2,700 pounds (squadron SOP dictates 2,000 pounds on deck during the day). Tower threw me a curve and directed a right break because the left pattern was full. No problem, I thought; a fire-breathing Hornet guy and a Navy fighter can turn right—contrary to popular belief. I waited until the downwind and 220 knots before I threw down the gear. It was only a moment before I realized I had not felt that satisfying thump, thump, thump, which was evidence the gear was down. Looking at the gear indicator, my nose gear and right main

showed down-and-locked, but the left did not. Oh boy, that wasn't right!

I climbed to 2,500 feet and entered a right hand delta pattern over the field. I started going through the PCL and called base to pull out the big blue sleeping pill. I traced the steps from positive to negative G, cycling the gear handle, and trying to blow down the gear. As I talked with my SDO, a Hornet from another squadron joined me and began to coordinate with tower, and an LSO who was controlling aircraft on the left runway. He also was able to watch my gear cycle. With the gear handle up, all the gear were up, and the doors were closed. With the handle down, the nose and right main came down, but the left main-gear door opened only two inches before jamming. I had a big problem.

The 15 minutes of troubleshooting cost me fuel; I was down to 1,500 pounds. Having attempted all NATOPS steps, I cut off the SDO after his brief about landing with one main gear up and set up for a straight-in. My impromptu wingman coordinated the arrested landing, departed my wing, and landed on the other runway.

Lining up on the runway, I set up a minimum-rate-of-descent landing and aimed the aircraft at the arresting gear. The LSO told me my tailhook was not down. Calling it out on the radio, I had just enough time to drop the hook and catch the wire. The airplane rolled left, settled on the port wing, but remained on the runway.



We had to replace the left aileron, to repair the left trailing-edge flap, and to patch up the LAU-7. But we returned the aircraft to flight status in no time at all.

The investigation revealed maintainers had left out a cotter pin on the main-landing-gear-door strut. A nut had worked loose (maybe during the gear-blow-down checks), and the gear door had jammed.

This incident proved that crew coordination is alive and well in the single-seat community. The SDO provided clear guidance on troubleshooting. My impromptu wingman gave extraordinary help in coordination with tower and the LSO. His help let me concentrate on troubleshooting and allowed me to complete NATOPS steps while I coordinated the landing. The LSO, by noticing the tailhook, saved the aircraft from more severe damage.

Cdr. Hansen wrote this article as a department head with VFA-87. He is now on an exchange assignment in the U.K.

Classic

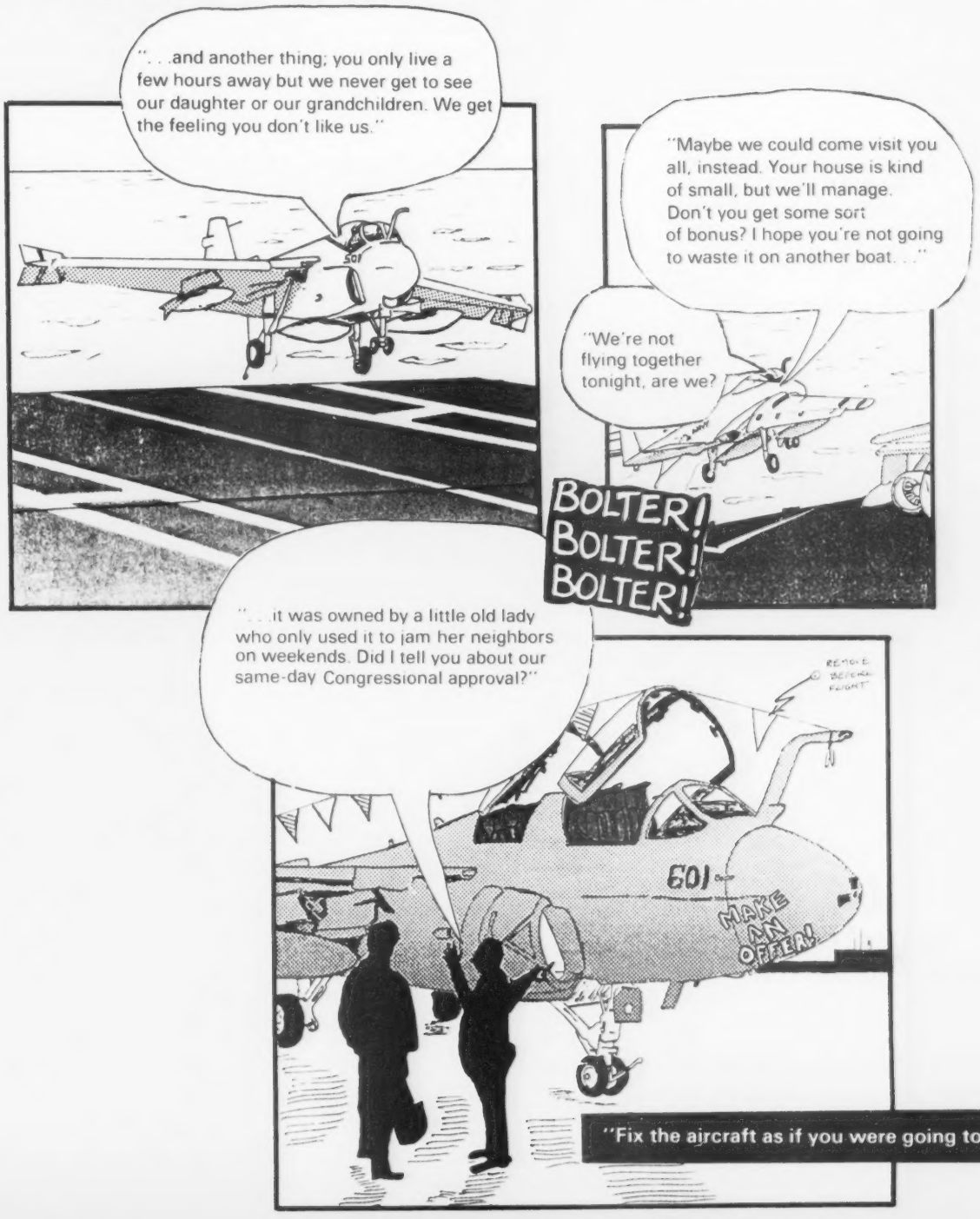
BROWNSHOES IN ACTION COMIX

"The kind real aviators like"
By Lt. Ward Carroll

Brownshoes Safety Cliché Clinic

"Fly as if your mother or girlfriend were with you."

Under *no* circumstances is this to be confused with your mother-in-law or ex-girlfriend. . .


". . .and another thing; you only live a few hours away but we never get to see our daughter or our grandchildren. We get the feeling you don't like us."
"Maybe we could come visit you all, instead. Your house is kind of small, but we'll manage. Don't you get some sort of bonus? I hope you're not going to waste it on another boat. . ."
"We're not flying together tonight, are we?
BOLTER! BOLTER! BOLTER!
". . .it was owned by a little old lady who only used it to jam her neighbors on weekends. Did I tell you about our same-day Congressional approval?"
601
MAKE AN OFFER!

"Fix the aircraft as if you were going to fly it."

Maintenance personnel should avoid fixing an aircraft as if they're going to sell it.

Ready Room Gouge
A good pilot may be disappointed by his airplane
but it will never surprise him.
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